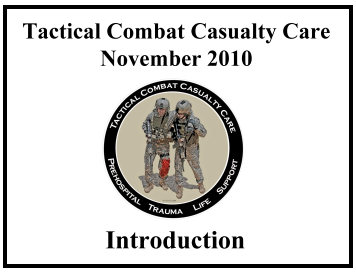
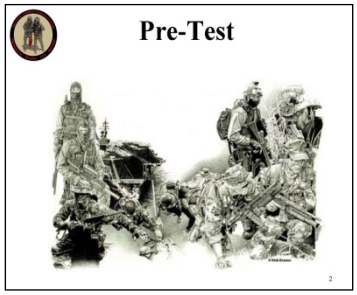
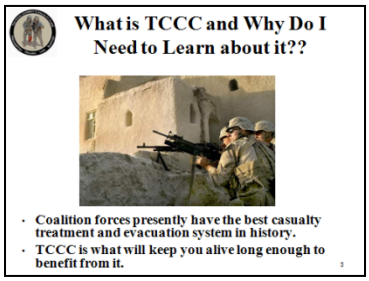
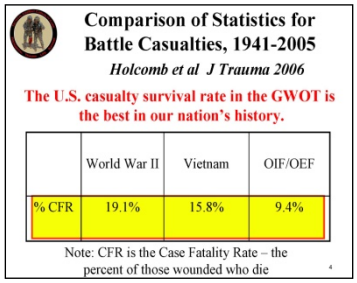
Instructor Guide for Introduction to TCCC

SLIDE	INSTRUCTIONAL POINTS	INSTRUCTOR NOTES
1  	Tactical Combat Casualty Care November 2010 Introduction	Tactical Combat Casualty Care is the new standard of care in Prehospital Battlefield Medicine. Previous medical training may not have contained the material presented in the following lessons. Medical care in combat is significantly different than that provided on the streets of Anywhere USA.
2  	Pre-Test	Pass out pre-tests Collect and grade when done Do not take time to review the tests. Tell students the same material will be on the post-test, so now they know what to pay attention to.
3  	• What is TCCC and Why Do I Need to Learn about it?? • • Coalition forces presently have the best casualty treatment and evacuation system in history. • TCCC is what will keep you alive long enough to benefit from it. •	TCCC has been remarkably successful at keeping our wounded warriors alive. Today we are going to teach you how to do it.
4  	Comparison of Statistics for Battle Casualties, 1941-2005	TCCC has been one of the big developments in the GWOT. The most important measure is how well TCCC does in helping to keep our wounded warriors alive to come home to their families. This study by Army Trauma Surgeon John Holcomb documents that we are now doing that better than ever before.

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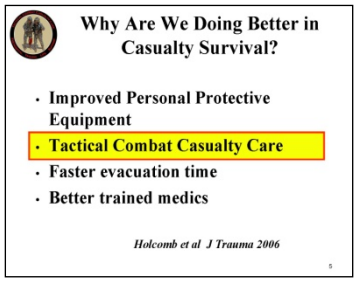
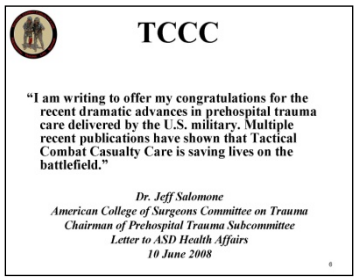
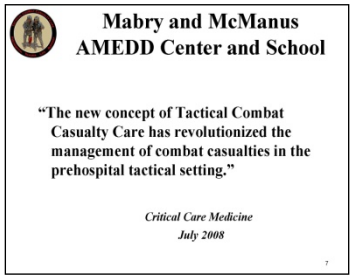
5  	Why Are We Doing Better in Casualty Survival? • Improved Personal Protective Equipment • Tactical Combat Casualty Care • Faster evacuation time • Better trained medics	COL Holcomb and his co-authors list TCCC as one of the major reasons for that success. Also kudos to the rest of the chain of care, from the Level II and III hospitals in theater, the evac crews, the staff at Landstuhl, all the way back to the staffs at Walter Reed and Bethesda
6  	TCCC	This letter is from the Chairman of the Prehospital Subcommittee of the American College of Surgeons Committee on Trauma. The same trauma experts that have established ATLS for managing trauma in the hospital endorses TCCC for battlefield trauma care.
7  	Mabry and McManus AMEDD Center and School	Major Bob Mabry is the Director of Academics for Combat Medic Training at the Army Medical Department Center and School (2008). He used to be an 18D Special Forces medic himself. LTC John McManus is the Director of Predeployment Medical Training for the Army Medical Department Center and School (2008).

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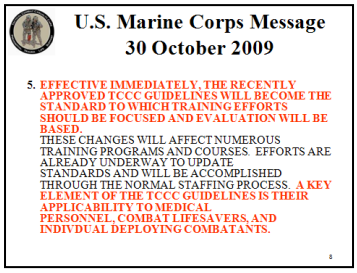
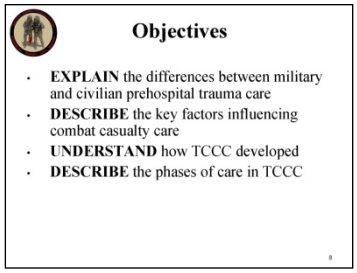
8  	U.S. Marine Corps Message 30 October 2009 EFFECTIVE IMMEDIATELY, THE RECENTLY APPROVED TCCC GUIDELINES WILL BECOME THE STANDARD TO WHICH TRAINING EFFORTS SHOULD BE FOCUSED AND EVALUATION WILL BE BASED. THESE CHANGES WILL AFFECT NUMEROUS TRAINING PROGRAMS AND COURSES. EFFORTS ARE ALREADY UNDERWAY TO UPDATE STANDARDS AND WILL BE ACCOMPLISHED THROUGH THE NORMAL STAFFING PROCESS. A KEY ELEMENT OF THE TCCC GUIDELINES IS THEIR APPLICABILITY TO MEDICAL PERSONNEL, COMBAT LIFESAVERS, AND INDIVDUAL DEPLOYING COMBATANTS.	This message from the Commandant of the Marine Corps directs that TCCC be taught throughout the Corps.
9  	Objectives As a result of participation in this lesson, participants should be able to: • EXPLAIN the differences between military and civilian prehospital trauma care • DESCRIBE the key factors influencing combat casualty care • UNDERSTAND how TCCC developed • DESCRIBE the phases of care in TCCC	

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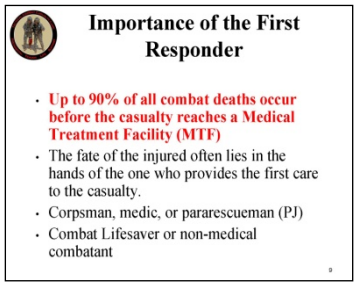
10  	Importance of the First Responder • Up to 90% of all combat deaths occur before the casualty reaches a Medical Treatment Facility (MTF) • The fate of the injured often lies in the hands of the one who provides the first care to the casualty. • Corpsman, Medic, or Pararescueman (PJ) • Combat Lifesaver or non-medical combatant	Prehospital care is the most important aspect in ensuring the survival of the casualty. If the casualty does not arrive alive at the Forward Surgical Team or the Combat Support Hospital, then the surgeons' skill can't help. There may not be any combat medical personnel available when the casualty occurs. Care may need to be initially provided by the combatant. The goal of TCCC is to identify and treat those casualties with preventable causes of death and keep them alive long enough to reach the hospital.
11  	Civilian Trauma Care Setting	If you are injured and taken to a civilian trauma center, you will be treated by a skilled team of medical professionals using the latest technology and working in a well-lighted, climate-controlled area. What about trauma that occurs in a tactical combat setting?

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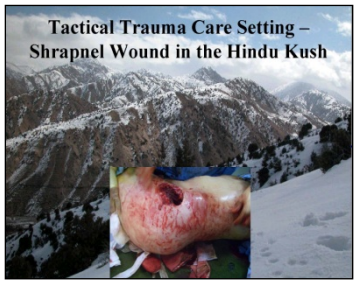
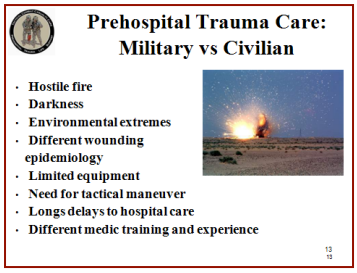
12 	Tactical Trauma Care Setting – Shrapnel Wound in the Hindu Kush	This is a good example of where the combat corpsmen and medics live and practice. This picture was taken at about 10,000 feet altitude in the Hindu Kush mountains in Afghanistan. The wound is a shrapnel wound of the hip. In this setting, care is much more difficult. It is common sense that the management plan is different here. TCCC helps to define how it's different.
13 	Prehospital Trauma Care: Military vs Civilian • Hostile fire • Darkness • Environmental extremes • Different wounding epidemiology • Limited equipment • Need for tactical maneuver • Longs delays to hospital care • Different medic training and experience	What factors must we think about when defining combat trauma care?

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 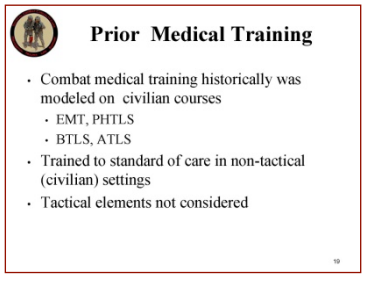
	Prior Medical Training in the Past
	• Combat medical training historically was modeled on civilian courses
	  • EMT, PHTLS
	  • BTLS, ATLS
	• Trained to standard of care in non-tactical (civilian) settings
	• Tactical elements not considered
		These are the training programs that are used to teach trauma care in the civilian community.
		
		They are all EXCELLENT training programs.
		
		However, they are designed for the civilian trauma setting - the principles they reflect often need to be modified for the tactical setting.

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15 **Different Trauma Requires Different Care Strategies** • Common sense, BUT • Difficult to devise and implement • No one group of medical professionals has all of the skills and experiences necessary. • Trauma docs and combat medical personnel have different skill sets. Both are needed to optimize battlefield trauma care strategies. • Tourniquets are one striking example of how battlefield trauma care has sometimes been slow to change.	Different Trauma Requires Different Care Strategies • Intuitive that these are different, BUT • Difficult to devise and implement • No one group of medical professionals has all of the skills and experiences necessary. • Trauma docs and combat medical personnel have different skill sets. Both are needed to optimize battlefield trauma care strategies. • Tourniquets are one striking example of how battlefield trauma care has sometimes been slow to change.	TCCC principles are now determined by physicians and combat medical personnel working as a team. In the past, the failure of these two groups to communicate well slowed the implementation of critical trauma care measures. We will look at a dramatic example of this.
16 **Tourniquets in WWII** **Wolff AMEDD J April 1945** "We believe that the strap-and-buckle tourniquet in common use is ineffective in most instances under field conditions…it rarely controls bleeding no matter how tightly applied."	Tourniquets in WWII Wolff AMEDD J April 1945 "We believe that the strap-and-buckle tourniquet in common use is ineffective in most instances under field conditions…it rarely controls bleeding no matter how tightly applied."	This report was written by an Army doctor in World War II. Provided very clear input on tourniquets. A tourniquet would seem to be a simple thing to fix. Now, fast-forward 25 years.
17 **Vietnam** Over 2500 deaths occurred in Vietnam secondary to hemorrhage from extremity wounds. These casualties had no other injuries. 	Vietnam Over 2500 deaths occurred in Vietnam secondary to hemorrhage from extremity wounds. These casualties had no other injuries.	25 years later, we had still not learned the tourniquet lesson in Vietnam. 2500 preventable deaths from extremity hemorrhage were the result. Surely, we would have learned the lesson after this experience. Maybe not, fast-forward another 25 years.

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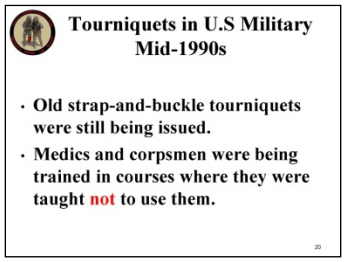
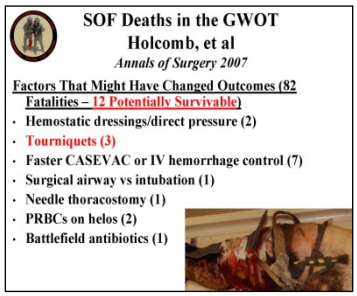
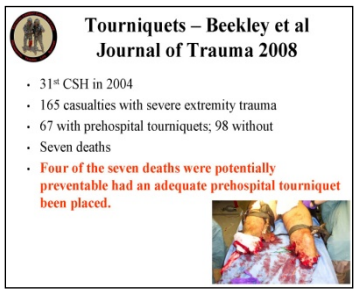
18  	Tourniquets in U.S Military Mid-1990s • Old strap-and-buckle tourniquets were still being issued. • Medics and corpsmen were being trained in courses where they were taught **not** to use them.	Amazingly, by the 1990's, we were still making the same mistakes about tourniquets that we had been in World War II.
19  	SOF Deaths in the GWOT Holcomb, et al *Annals of Surgery 2007* Factors That Might Have Changed Outcomes (82 Fatalities – 12 Potentially Survivable) • Hemostatic dressings/direct pressure (2) • Tourniquets (3) • Faster CASEVAC or IV hemorrhage control (7) • Surgical airway vs intubation (1) • Needle thoracostomy (1) • PRBCs on helos (2) • Battlefield antibiotics (1)	And we paid a price for that when the GWOT started. This paper on Special Ops deaths showed 3 out of 12 potentially preventable deaths were due to extremity hemorrhage. Note the makeshift tourniquets used here.
20  	Tourniquets – Beekley et al Journal of Trauma 2008 • 31st CSH in 2004 • 165 casualties with severe extremity trauma • 67 with prehospital tourniquets; 98 without • Seven deaths • Four of the seven deaths were potentially preventable had an adequate prehospital tourniquet been placed.	We were still losing people to extremity bleeding in 2004. Notice the makeshift tourniquets used here. At about this point, the military had started a very strong effort to push tourniquets forward. Since this study, preventable deaths from extremity hemorrhage have now been minimized.

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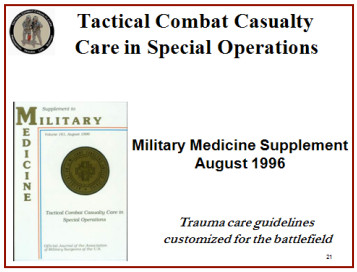
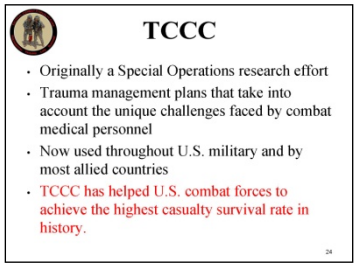
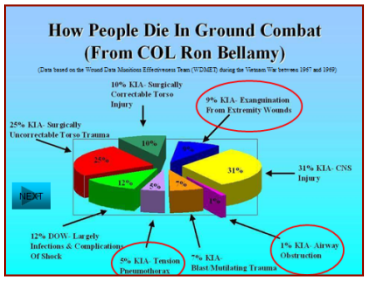
21 	Tactical Combat Casualty Care in Special Operations Military Medicine Supplement August 1996	In the mid-90s, the Special Operations medical community began looking for some better answers for combat trauma and Tactical Combat Casualty Care was born.
22 	TCCC • Originally a Special Operations research effort • Trauma management plans that take into account the unique challenges faced by combat medical personnel • Now used throughout U.S. military and by most allied countries • TCCC has helped U.S. combat forces to achieve the highest casualty survival rate in history.	Although TCCC started in Special Ops, it is now used by all services in the U.S. military, conventional as well as Special Ops. It has proved dramatically successful in the Global War on Terrorism. TCCC has been a major factor in U.S. forces having the highest casualty survival rate in our history.
23 	TCCC Approach • Identify the causes of preventable death on the battlefield • Address them aggressively • Combine good medicine with good tactics	Picture is the Iraq-Syrian border
24 	How people die in ground combat	The three most common causes of preventable death on the battlefield are: • Hemorrhage from extremity wounds • Tension pneumothorax • Airway problems

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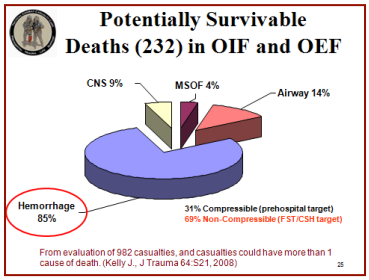
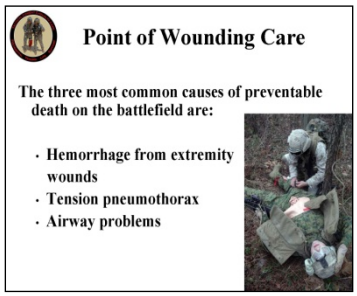
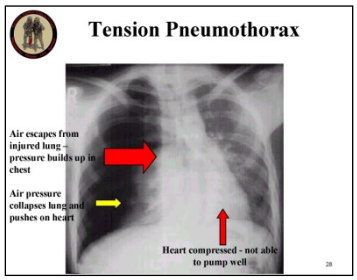
25 	Potentially Survivable Deaths (232) in OIF and OEF From evaluation of 982 casualties, and casualties could have more than 1 cause of death. (Kelly J., J Trauma 64:S21, 2008)	This is more recent data from Iraq and Afghanistan. Hemorrhage is still the major cause of preventable deaths.
26 	Point of Wounding Care The three most common causes of preventable death on the battlefield are: • Hemorrhage from extremity wounds • Tension pneumothorax • Airway problems	These are the injuries that we need to focus on for saving lives in combat.
27 	Extremity Hemorrhage	Play Video Here is a classic example of a preventable cause of death - arterial hemorrhage from an leg wound in a pig). Forgot about the “Golden Hour” – bleeding like this will kill you with just a few minutes. If no one controls this type of bleeding in a casualty, that casualty is going to die very quickly.
28 	Tension Pneumothorax	This X-ray shows a tension pneumothorax, which in combat is usually secondary to a penetrating injury to the chest. This condition may be quickly fatal if not identified and treated. Tension pneumothorax is the SECOND LEADING cause of preventable death on the battlefield.

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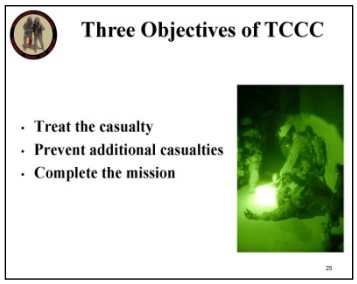
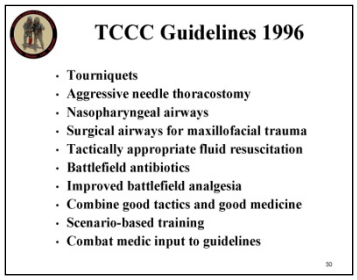
29 	Airway Trauma	Deaths from airway trauma are a small percentage of combat fatalities. If the casualty is conscious, he will instinctively protect his own airway. While this patient has a significant injury to his airway, he is able to breath on his own reasonably well if he is sitting up and leaning forward. This casualty survived and did well after reconstructive surgery. Could you lay this casualty down on a littler on his back to transport him? Probably a bad idea - all that blood and mucus would funnel right into his airway.
30 	Three Objectives of TCCC • Treat the casualty • Prevent additional casualties • Complete the mission	The ongoing mission does not stop just because there is a casualty. The 3 objectives of TCCC are to provide lifesaving care to the injured combatant, to limit the risk of further casualties, and to help the unit achieve mission success.
31 	TCCC Guidelines 1996 • Tourniquets • Aggressive needle thoracostomy • Nasopharyngeal airways • Surgical airways for maxillofacial trauma • Tactically appropriate fluid resuscitation • Battlefield antibiotics • Improved battlefield analgesia • Combine good tactics and good medicine • Scenario-based training • Combat medic input to guidelines	Here were the principles of TCCC as they were originally published in 1996. Read the guidelines. There had to be a way to keep these guidelines updated.

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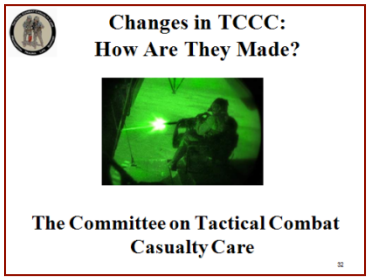
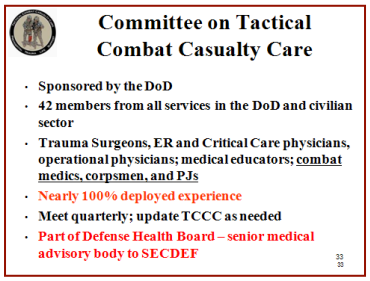
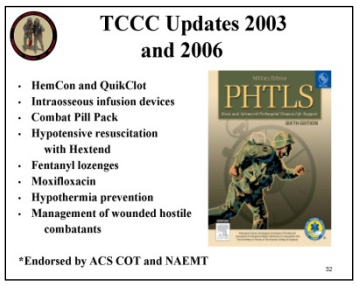
32  	Changes in TCCC: How Are They Made? The Committee on Tactical Combat Casualty Care	The DoD has a group with a charter to keep the TCCC Guidelines updated.
33  	Committee on Tactical Combat Casualty Care • Sponsored by the DoD • 42 members from all services in the DoD and civilian sector • Trauma Surgeons, ER and Critical Care physicians, operational physicians; medical educators; combat medics, corpsmen, and PJs • Nearly 100% deployed experience • Meet quarterly; update TCCC as needed • Part of Defense Health Board – senior medical advisory body to SECDEF	
34  	TCCC Updates 2003 and 2006 • HemCon and QuikClot • Intraosseous infusion devices • Combat Pill Pack • Hypotensive resuscitation with Hextend • Fentanyl lozenges • Moxifloxacin • Hypothermia prevention • Management of wounded hostile combatants *Endorsed by ACS COT and NAEMT	These are changes in the TCCC guidelines that were made by the CoTCCC in 2003 and 2006. Note that the updated guidelines are now published with each new version of the Military Edition of Prehospital Trauma Life Support Manual. The recommendations made in this manual have the endorsement of the American College of Surgeons Committee on Trauma and the National Association of EMTs.

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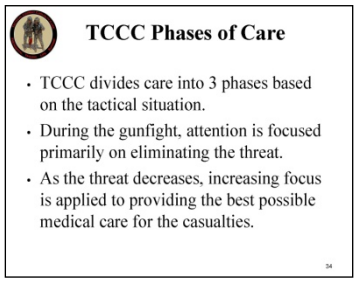
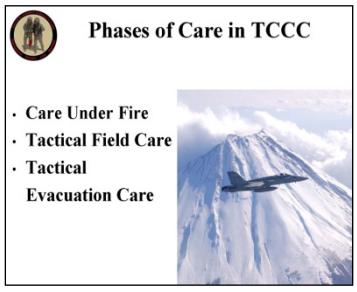
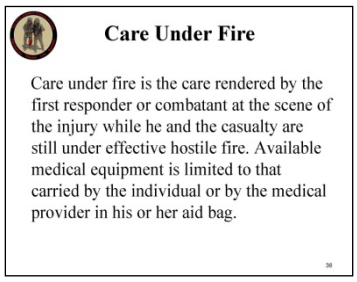
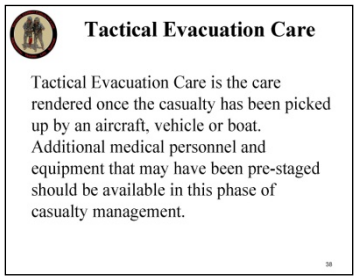
35  	Timing Is Everything • Casualty scenarios in combat usually entail both a medical problem as well as a tactical problem. • We want the best possible outcome for both the casualty and the mission. • Good medicine can sometimes be bad tactics; bad tactics can get everyone killed or cause the mission to fail • Doing the RIGHT THING at the RIGHT TIME is critical	Most battlefield casualty scenarios involve making both medical and tactical decisions very rapidly. Remember the enemy still wants to kill you. The combat environment does not take a "time-out" just because you have a casualty.
36  	TCCC Phases of Care • TCCC divides care into 3 phases based on the tactical situation. • During the gunfight, attention is focused primarily on eliminating the threat. • As the threat decreases, increasing focus is applied to providing the best possible medical care for the casualties.	Doing the RIGHT thing at the WRONG time can get you and your teammates killed.
37  	Phases of Care in TCCC • Care Under Fire • Tactical Field Care • Tactical Evacuation Care	These are our 3 phases of care in TCCC. Next we'll define these three phases of care. The picture is an FA-18 flying by Mt. Fuji.
38  	Care Under Fire Care under fire is the care rendered by the first responder or combatant at the scene of the injury while he and the casualty are still under effective hostile fire. Available medical equipment is limited to that carried by the individual or by the medical provider in his or her aid bag.	The key sentence in this statement is that the first responder and the combatant are still under effective hostile fire.

SLIDE	INSTRUCTIONAL POINTS	INSTRUCTOR NOTES
39  	Tactical Field Care Tactical Field Care is the care rendered by the first responder or combatant once he and the casualty are no longer under effective hostile fire. It also applies to situations in which an injury has occurred, but there has been no hostile fire. Available medical equipment is still limited to that carried into the field by unit personnel. Time to evacuation to a medical treatment facility may vary considerably.	The tactical situation has now changed. The first responder and the casualty are now no longer under effective hostile fire. This allows more time and a little more safety, to be able to perform more medical care. Remember – effective hostile fire could resume at any time.
40  	Tactical Evacuation Care Tactical Evacuation Care is the care rendered once the casualty has been picked up by an aircraft, vehicle or boat. Additional medical personnel and equipment that may have been pre-staged should be available in this phase of casualty management.	Tactical Evacuation Care is similar to TFC in many respects. However, the extra medical personnel and equipment being available on the evacuation asset may enable you to do some additional care. The term “Tactical Evacuation” encompasses both Casualty Evacuation (CASEVAC) and Medical Evacuation (MEDEVAC). More on this later.

SLIDE	INSTRUCTIONAL POINTS	INSTRUCTOR NOTES
41 **Summary of Key Points** • Prehospital trauma care in tactical settings is markedly different from civilian settings. • Tactical and environmental factors have a profound impact on trauma care rendered on the battlefield. • Good medicine can be bad tactics. • Approximately 20% of combat deaths today are potentially preventable. • Good first responder care is critical. • **TCCC will give you the tools you need!**	Summary of Key Points • Prehospital trauma care in tactical settings is markedly different from civilian settings. • Tactical and environmental factors have a profound impact on trauma care rendered on the battlefield. • Good medicine can be bad tactics. • Approximately 20% of combat deaths today are potentially preventable. • Good first responder care is critical. • TCCC will give you the tools you need!	TCCC principles are different than the civilian training you may have received in the past. This improvement in how we approach the combat casualty has resulted in significantly lower death rates in combat. Good battlefield care is paramount to avoid preventable causes of death.
42 **Summary of Key Points** • Three phases of care in TCCC • Care Under Fire • Tactical Field Care • TACEVAC Care	Summary of Key Points • Three phases of care in TCCC • Care Under Fire • Tactical Field Care • TACEVAC Care	Summarize key point of each phase.
43 **Summary of Key Points** • **TCCC – designed for combat** • **NOT designed for civilian trauma settings** 	Summary of Key Points • TCCC – designed for combat • NOT designed for civilian trauma settings • In civilian settings, follow your EMS policy	TCCC is NOT necessarily the standard of care in civilian prehospital settings. In civilian EMS settings, you should follow the guidance established by your Emergency Medical Services Director.
44 	Questions?	